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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,166	03/31/2000	Scott A. Rosenberg	042390.P6729	2691

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EXAMINER

KOVALICK, VINCENT E

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 12/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,166

Applicant(s)

ROSENBERG

Examiner

Vincent E Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-7,10-15 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-7,10-15 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Applicant's Preliminary Amendment dated October 14, 2002. The amendments to claims 3-7, 10-15 and the addition of new claims 23-24 have been noted and entered in the record.

Applicant's remarks relative to claim 3 and 10 are rendered moot in light of the amendments to claim 3 and the addition of new claims 23-24.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3, 5, 10, 12, 15 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dye (USP 6,002,411) taken with Dye (USP 6,173,381).

Relative to claims 3, 10 and 15, Dye **teaches** an integrated memory and graphics controller which includes improved data processing and graphical processing capabilities (col. 1, lines 7-10; col. 2, lines 28-67; col. 3, lines 1- 67; col. 4, lines 1-67 and col. 5, lines 1-63). Dye further **teaches** a system to refresh a display (col. 4, lines 42-44), the system comprising:

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a memory to store images of an image frame in a plurality of memory pages; a processor to perform drawing operations to generate the images for the image frame, the processor marking memory pages corresponding to regions of the image frame that have been updated(col. 4, lines 9-44); and a display controller in communication with the memory to access the image frame and to send only the marked memory pages of the image frame to the display to refresh the display (col. 9, lines 6-9 and 38-42; col. 10, lines 35-42 and col. 17, lines 7-14).

Dye ('411) **does not teach** updating regions of the image frame while performing the drawing operation.

Dye ('381) **teaches an** integrated memory and a graphics controller (col. 2, lines 34-67; col. 3, lines 1-67 and col. 4, lines 1-21); Dye ('318) further **teaches** updating regions of the image frame while performing the drawing operation (col. 14, lines 26-41).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Dye ('411) the feature as taught by Dye ('381) in order to include in the system the feature of updating the data of only those images in which a change was made, and updating the display refresh list to facilitate a display refresh including only the image data that has changed.

Regarding claims 5 and 12, it would have been obvious to a person of ordinary skill in the art at the time of the invention that the capacity of the memory pages would be sufficient to accommodate the system data storage/processing, this would include a memory page size of four kilobytes if that is specified as a system requirement.

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Relative to claims 21-22, Dye ('411) further **teaches** the system wherein the display controller sends the image frame one memory unit at a time to the display to refresh the display (col. 3, lines 63-67 and col. 4, lines 1-13 and 42-44).

It would have been obvious to a person of ordinary skill in the art at the time of the invention that with the means to select specific units of marked memory for display, the means could be structured and directed to select a defined quantity of data (e.g. a specific memory page) for transfer to be displayed.

4. Claims 4, 11, 18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dye ('411) taken with Dye ('381) as applied to claims 3, 10 and 15 respectively in item 3 hereinabove, and further in view of Broemmelsiek (USP 5,574,836).

Relative to claims 4, 11, 18, 23 and 24, Dye ('411) taken with Dye ('381) **does not teach** said system wherein the image frame is divided into tiles representing two-dimensional regions of the image frame, each of the tiles is stored in one separate memory page.

Broemmelsiek **teaches** an interactive display apparatus (col. 3, lines 60-67 and col. 4, lines 1-49); Broemmelsiek further **teaches** said system wherein the image frame is divided into tiles representing two-dimensional regions of the image frame, each of the tiles is stored in one separate memory page (col. 4, lines 32-47).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Dye ('411) taken with (Dye ('381) the feature as taught by

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Broemmelsiek in order to facilitate special handling of image data representing two-dimensional regions of the image frame.

5. Claims 6, 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dye ('411) taken with Dye ('381) as applied to claims 3, 10 and 15 respectively in item 3 hereinabove, and further in view of Forkey (USP 5,733,246).

Regarding claims 6, 13 and 19, Dye ('411) taken with Dye ('381) **does not teach** the said system wherein the image frame is represented by a configuration where color components of a pixel are deposited in contiguous memory locations.

Forkey **teaches** a viewing instrument that can obtain color images of dimly illuminated objects (col. 4, lines 37-67 and col. 5, lines 1-21); Forkey further **teaches** the said system wherein the image frame is represented by a configuration where color components of a pixel are deposited in contiguous memory locations (col. 6, lines 63-67 and col. 7, lines 1-8).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Dye ('411) taken with Dye ('381), the features as taught by Forkey in order to minimize color image processing time.

6. Claims 7, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dye ('411) taken with Dye ('381) as applied to claims 3, 10 and 15 respectively in item 3 hereinabove, and further in view of Drewry (USP 5,748,178).

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Relative to claims 7, 14 and 20, Dye ('411) taken with Dye ('381) **does not teach** a system wherein the image frame is represented by a configuration where color components of a pixel are separated and deposited in multiple color planes.

Drewry **teaches** a digital video system and methods for efficient rendering of superimposed vector graphics (col. 2, lines 66-67; col. 3, lines 1-67 and col. 4, lines 1-4); Drewry further **teaches** a system wherein the image frame is represented by a configuration where color components of a pixel are separated and deposited in multiple color planes (col. 6, lines 12-22).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Dye ('411) taken with Dye ('381) the features as taught by Drewry in order to minimize color image processing time.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	6,263,426	Abdallah et al.
U. S. Patent No.	6,008,823	Rhoden et al.
U. S. Patent No.	5,596,376	Howe
U. S. Patent No.	5,486,876	Lew et al.

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Responses

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vincent E. Kovalick** whose telephone number is **(703) 306-3020**. The examiner can normally be reached Monday-Thursday from 9:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Bipin Shalwala**, can be reached at **(703) 305-4938**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

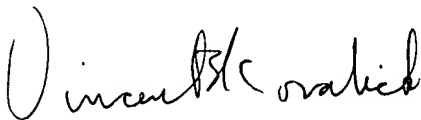
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Inquires

9. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(703) 306-0377**.

A handwritten signature in cursive script that reads "Vincent E. Kovalick". The signature is written in dark ink and is positioned above the printed name.

Vincent E. Kovalick